

The FY01 STAR Operations Work Plan

Introduction

The purpose of this document is to articulate the Work Plan by which STAR Operations Management, with oversight by STAR Management, and in collaboration with the membership of STAR, will establish safe, efficient, and effective operation of the STAR Detector at RHIC. It specifically addresses, for all institutions and staff involved in this effort, the relationship of the STAR Operations Group to BNL Management and the STAR Collaboration, the STAR Operations management structure, the roles and responsibilities of key personnel, the management and tracking of budgets, institutional responsibilities for support of STAR Operations, and the relationship between the STAR Operations Work Plan and the STAR run plan. The final section discusses the relationship between STAR Operations and the Collider-Accelerator Department (C-AD).

Relationship of STAR Operations Group to BNL Management and the STAR Collaboration

Effective operation of the RHIC Collider facility and detectors, and stewardship of the RHIC scientific program are primary mission objectives of Brookhaven National Laboratory. The STAR Operations Group is a service organization within the STAR Group of the Physics Department at BNL. This Group is responsible to the Physics Department Chairman to provide the necessary management, technical support, planning and coordination, to establish safe, efficient, and effective operation of the STAR detector in order to achieve the programmatic goals of the STAR Collaboration.

The relationship between the group supporting operation of the STAR Detector and the STAR Collaboration is indicated in Figure 1. The structure of the STAR Operations Group is shown in Figure 2. The organization charts for new detectors and upgrades as well as that for new technical developments are shown in Figures 3 and 4 respectively. The programmatic goals of the STAR Collaboration are input to the STAR Operations Group through the office of the STAR Collaboration Spokesperson. STAR Operations Management is responsible for establishing rules and procedures required to insure compliance with the Integrated Safety Management Program at BNL, and to effectively manage budgets and manpower allocated for support of STAR Operations. STAR Collaboration policies and decisions affecting the STAR scientific program are the responsibility of STAR Management.

Upon receiving input from the office of the STAR Spokesperson regarding the programmatic goals of STAR for a given term of operation, the STAR Operations Group is responsible for developing a practical plan to achieve those goals. It is further responsible for carrying out planning activities, and for providing coordination, and technical support to carry out the STAR program. Practical management of the activities of personnel working in support of STAR Operations is the responsibility of STAR Operations Management.

As part of its responsibility, in the middle of each fiscal year, the STAR Operations Group will develop a Work Plan detailing the projected allocation of personnel and resources to meet the programmatic goals of STAR in the following fiscal year. This Work Plan will be

developed in consultation with, and using input from, STAR Sub-System Managers and Project Leaders. Once developed, the Work Plan for the coming fiscal year will be forwarded to the STAR Collaboration Spokesperson for consideration and suggested changes by the STAR Council. Once adopted, the Work Plan will become the blueprint from which the STAR Operations Group will work to achieve the programmatic goals of STAR. If modifications of the Work Plan are required within a given fiscal year for effective operation of the STAR detector, changes will be worked out by STAR Operations Management in consultation with the STAR Sub-System Managers and Project Leaders and STAR Management.

A further responsibility of the STAR Operations Group is to develop, in consultation with the STAR Collaboration Spokesperson, an effective plan for self-assessment.

STAR Operations Management Structure

The management structure in place for support of STAR Operations, is indicated in Fig. 2. There are two groups specifically tasked with providing support for STAR Operations: the STAR Technical Support Group headed by the STAR Chief Mechanical Engineer (Ralph Brown) and the STAR Detector Support Group, headed by the STAR Operations Coordinator (William Christie). The makeup and responsibilities of these groups are indicated in the sections that follow. The responsibilities of the people leading these groups are discussed in the section on “Roles and Responsibilities of Key Personnel”.

Makeup and Responsibilities of the STAR Technical Support Group

The STAR Technical Support Group consists of professionals (e.g. engineers) and technical support staff (e.g. designers and technicians) who are BNL employees working in support of STAR Operations. Staff in this group generally work a normal five day work week and do not participate in shift work. Technicians are available during the day shift, five days a week, to address needs identified during the running of STAR, but technicians supported by STAR are not used to maintain a 24 hour shift watch¹. The people in the STAR Technical support Group generally have a minimal interaction with STAR shift personnel. They perform general and/or specialized work in support of long and short-term STAR operations needs, but their activities are determined by and coordinated through the STAR Technical Support Group Leader. Technicians generally work on various tasks, and are not captured for a given sub-system.

Major responsibilities of the STAR Technical Support Group include:

- 1) general maintenance and technician support of the STAR Detector
- 2) providing engineering and design coordination for the integration and installation of new star detectors and upgrades

¹ The Collider Accelerator Department will maintain a 24 hour-a-day technician watch. However, these technicians will be concerned with the overall operation of RHIC (accelerator plus detectors) and will not be captured in any sense for STAR. They may from time-to-time be called upon to work on RHIC systems which affect STAR operation, but generally will not have knowledge about or ability to fix STAR specific systems.

- 3) coordinating maintenance and installation work by STAR Operations staff, CAD staff, and STAR Collaborators
- 4) the maintenance of STAR tooling and fixtures as well as STAR provided infrastructure within STAR buildings and facilities
- 5) the issuance of work permits for all physical work conducted by STAR personnel in STAR halls or facilities
- 6) the ownership and maintenance of the STAR change control system
- 7) the ownership and maintenance of "as-built" drawings and documentation repository
- 8) the maintenance of training certifications for personnel in the STAR Technical Support Group.

Makeup and Responsibilities of the STAR Detector Support Group

The STAR Detector Support Group consists of scientists, engineers, and professional staff (e.g. programmers) from the STAR Collaboration (BNL and non-BNL) who are responsible, as Sub-System Managers, Project Leaders, and support staff for providing the expertise, management, and leadership necessary to establish safe, efficient, and effective operation of a given STAR detector component or system. Members of this group may or may not participate in STAR shift work, depending on direction from their institutional representative. However, work performed by members of the Detector Support Group is in fulfillment of institutional responsibilities for support of STAR Operations, and is not considered to be fulfillment of institutional commitments for the staffing of shifts. Members of this group may or may not be required to be present at BNL, depending upon whether routine operation of a given sub-system has been established (see the section on institutional responsibilities). The members of this group help direct general and/or specialized work in support of long and short-term STAR operations needs. The plan of activities of the Sub-System Managers is determined through discussion with the STAR Operations Coordinator. The performance of work to carry out the plan is coordinated through the STAR Technical Support Group Leader. Sub-Systems Managers are responsible for directing the activities of Collaboration personnel under their supervision to carry out the work according to plan.

Major responsibilities of the STAR Detector Support Group include:

- 1) leading STAR scientific and/or technical personnel to establish safe, efficient, and effective operation of the various STAR sub-systems
- 2) managing available operations resources (manpower and funding) designated for the various sub-systems to achieve the above goals
- 3) determining the need for, and helping to develop, documentation and training necessary to hand over routine operation of STAR sub-systems to STAR shift personnel
- 4) assessing STAR detector component/system performance relative to design expectations in order to analyze both detector-specific and global sources of discrepancy

- 5) assessing the impact of integrating new detector systems which may affect the existing detector configuration or operation
- 6) optimizing the overall performance of STAR detectors and systems within the existing envelope of STAR's operational parameters to achieve the goals of the STAR physics program
- 7) assessing ways to improve overall STAR detector performance with modest upgrades or changes to the envelope of STAR detector performance
- 8) helping to maintain configuration control of STAR detector components and systems
- 9) helping to develop, on a yearly basis, the projected need for budgetary support (capital equipment and operations support) for the coming year
- 10) providing input during the formulation of the STAR run plan, and working to carry out the final run plan as completely and effectively as possible.

Roles and Responsibilities of Key Personnel

Head of STAR Operations (BNL STAR Group Leader)

The STAR Group Leader is responsible for effective leadership and management of the BNL STAR Group to achieve all of its research and technical support goals. With regard specifically to STAR Operations, he is responsible, as Head of STAR Operations, for insuring an effective management structure is implemented, that the resource requirements to achieve effective operation of STAR are identified, and that an effective work plan which makes optimal use of available resources is developed. He is further responsible for insuring that effective means for self-assessment and for receiving input from the STAR Collaboration are established, as part of a program of continual improvement. The STAR Group Leader supervises the STAR Technical Support Group Leader and the STAR Operations Coordinator regarding the development of strategies to achieve these goals.

STAR Operations Coordinator

The STAR Operations Coordinator is responsible for effective leadership and management of the STAR Detector Support Group to achieve its goals. Specifically, he is responsible for overseeing the development and implementation of an effective plan to provide Collaboration support (BNL and non-BNL) for the operation of the STAR Detector, both with regard to maintenance work, and activity focused on preparing the STAR detector to achieve the goals of the STAR run plan. The plan of activities of the Sub-System Managers is determined through discussion with the STAR Operations Coordinator. The performance of work to carry out the plan is coordinated through the STAR Technical Support Group Leader. The Sub-Systems Managers are responsible for directing the activities of Collaboration personnel under their supervision to carry out the work according to plan.

As part of the yearly BNL evaluation process, the STAR Operations Coordinator is responsible for providing an assessment of the productivity and effectiveness of Detector

Support Group staff who are BNL employees. He is further responsible, based on input from the Sub-System Managers, for helping to prepare an annual projection of the budgetary need for STAR Operations for the coming year. In addition, he may be asked to serve upon or chair committees to review mechanical modifications or upgrades to the STAR Detector system, and to help assess the priority of proposed STAR infrastructure upgrades.

Additional responsibilities include representing STAR to the Collider-Accelerator Department with regard to the status of STAR Operations, and staying current on ES&H and other requirements placed on STAR by that organization.

Things that the STAR Operations Coordinator does not have specific responsibility for include scheduling people for shifts, STAR user support at BNL, and writing STAR ES&H documentation, except when he deems it appropriate or necessary.

STAR Technical Support Group Leader

The STAR Technical Support Group Leader is responsible for effective leadership and management of the STAR Technical Support Group to achieve all of its technical support goals. Specifically, he is responsible for the direct supervision of STAR Technical Support Group staff, and for overseeing the development and implementation of an effective plan to provide technical support for the STAR Collaboration. He is also responsible for the coordination of all work performed on the STAR Detector or at the STAR facility.

In addition to managing the STAR Technical Support Group, the STAR Technical Support Group Leader will be responsible for performing annual evaluations of STSG personnel. He is responsible for helping to prepare an annual projection of the budgetary need for STAR Operations for the coming year. In addition, he may be asked to serve upon or chair committees to review mechanical modifications or upgrades to the STAR Detector system, and to help assess the priority of proposed STAR infrastructure upgrades.

STAR Head of Technical Development

The Head of STAR Technical Development has oversight responsibility for technical development of new detectors and related R&D in STAR, including major capital equipment upgrades to existing detectors. Further responsibilities include setting up and managing a detector development and staging laboratory next to the STAR experimental hall.

The role of the Head of STAR Technical Development is outside the scope of STAR Operations, and the responsibilities of the person in this position are distinct from the those of the STAR Operations Coordinator and STAR Technical Support Group Leader. The Operations Coordinator and the Technical Support Group Leader are responsible for coordinating and managing technical effort in support of the operation of STAR, and for the integration/installation of new detectors.

Within the STAR organization, the Head of Technical Development (HTD) reports directly to STAR Management. In order to ensure maximum effectiveness it is agreed that the HTD should pursue a joint appointment between BNL and his home institution. At BNL the HTD is a member of the BNL STAR Group and reports administratively to the BNL STAR Group Leader.

Specific responsibilities of the Head of STAR Technical Development include playing a leading role in the development of a long range plan (5-6 years) for detector upgrades, including STAR major capital equipment upgrades to existing systems (e.g., TRIG, DAQ, TPC, SVT), and possible additional new detector systems. The HTD will advise on the direction and scope of the long range plan for STAR, and will participate in the STAR decision process regarding the final plan which is adopted.

In addition, the HTD will solicit and promote detector development projects among collaborating STAR institutions. The person serving in this position will further be responsible for evaluating STAR collaborator development projects through informal visits and conversations. When new projects are proposed to STAR management, the HTD will meet with the proponents to assess technical issues, connect them with appropriate STAR and RHIC interface people, and advise STAR management on technical issues regarding the proposals. The HTD will maintain close contact in general with technical experts in STAR on developing technical issues.

Sub-System Managers

Sub-System Managers working in support of STAR Operations within the STAR Detector Support Group have the following roles and responsibilities:

- 1) To lead a team of STAR scientific and/or technical personnel focused on establishing safe, efficient, and effective operation of their sub-system
- 2) To manage available operations resources (manpower and funding) designated for their sub-system to achieve the above goals
- 3) To participate in the STAR work planning procedure by helping to identify all work to be performed in the STAR Hall to the STAR Facilities Manager, and helping to insure a work permit is obtained for tasks which are determined by him not to be "skill of the craft"
- 4) To work to help assure that all activities and work performed in their area of responsibility meet the requirements of the BNL Integrated Safety Management program.
- 5) Based on feedback from the STAR Facilities Manager, as part of the work planning process, helping to identify any specialized training requirements for a given job, communicating those requirements to personnel on their team who will work on those tasks, and helping to insure those personnel receive the necessary training.
- 6) To participate in STAR scheduling meetings as appropriate to assure work is coordinated through STAR Operations Management
- 7) To represent their sub-system to the Collaboration and STAR Operations Management with regard to resource requirements, scheduling issues, and operational status.
- 8) To insure that documentation for their subsystem necessary for the general Collaboration membership to operate the STAR Detector for data taking is developed and maintained.

The STAR personnel who have agreed to serve as STAR Sub-System Managers and certify, by memorandum of understanding that they understand and agree with the description of their roles and responsibilities as outlined above are listed in Appendix 1.

Project Leaders

Project Leaders differ from Sub-System managers in that they are the heads of construction projects that are ongoing.

Dr. Jay Marx is the person within STAR Management who is responsible for oversight and management at the Collaboration level of AEE projects and the construction of new detectors. However, for work on these projects which occurs at BNL, Project Leaders also are responsible to STAR Operations Management to insure tasks are performed in conformance with BNL ES&H policy. For Project work performed at BNL, Project Leaders therefore have the following roles and responsibilities:

- 1) To participate in the STAR work planning procedure by helping to identify all work to be performed in the STAR Hall to the STAR Facilities Manager, and helping to insure a work permit is obtained for tasks which are determined by him not to be "skill of the craft".
- 2) To work to help assure that all activities and work performed in their area of responsibility meet the requirements of the BNL ES&H Standards and the BNL Integrated Safety Management Program.
- 3) Based on feedback from the STAR Facilities Manager, as part of the work planning process, helping to identify any specialized training requirements for a given job, communicating those requirements to personnel on their team who will work on those tasks, and helping to insure those personnel receive the necessary training.
- 4) To participate in STAR scheduling meetings as appropriate to assure work is coordinated through STAR Operations Management
- 5) To insure that documentation for their project necessary for the general Collaboration membership to operate elements of STAR Detector which they have delivered for the purpose of data taking or testing is developed and maintained.

The STAR personnel, who are STAR Project Leaders under Dr. Jay Marx, agree and certify, by memorandum of understanding that they understand and agree with the description of their roles and responsibilities as outlined above are listed in Appendix 2.

Management and Tracking of Budgets

It is anticipated that each year, based on input from STAR Sub-System Managers and STAR Project Leaders concerning the real cost of operating the STAR Detector, the projected budget need for the coming year will be input to BNL Management through the Office of the Chairman of the Department of Physics. The basis for this projection will be the development of the yearly STAR Operations Work Plan. Upon receiving the real budget each fiscal year, STAR Operations Management will determine, based on input from STAR Management and

STAR Sub-System Managers and Project Leaders an optimal plan to distribute budget authority to insure effective support of STAR Operations.

Once an optimized budget plan has been agreed upon, each Sub-System Manager or Project Leader will be responsible for using the budget authority in their area to achieve effective operation of the detector components or systems they have delivered to BNL as operational elements of the STAR detector. Specifically, Sub-System Managers will be expected to generate, with the help of STAR administrative staff, purchase requests needed to support maintenance and operation of the component or system of STAR for which they have responsibility.

Within STAR, budget expenditures will be tracked and reported by Sub-System on a monthly basis by the STAR Group Administrative Assistant. Budget expenditures will be monitored for both the short term and the integral rate at which funds are expended for each sub-system.

The projected FY2000 budget, including overhead, for support of STAR Operations is shown in Table 1. This budget was developed with input as to support needs from STAR Sub-System managers and Project Leaders. Detailed information on the projected need in each category is provided in the STAR Operations Dictionary (Appendix 3). A breakdown of the manpower supported by STAR Operations is provided in Appendix 4.

Table 1
FY01 STAR Operations DOE Funding
(\$ Millions)

	MST	Labor	Capital Equipment	User Support
STAR	1.97	3.24	0.360	0.250

These totals accord with the November 2000 DOE Financial Plan for BNL. The level of funding for user support will be determined on a yearly basis as part of developing the annual STAR Operations Work Plan. Funding in this category is used for travel support for visitors, and to cover BNL expenses related to visitor support (space charges, communications charges, consumables, etc.). Funding for travel support will be administrated by the STAR Spokesperson and distributed based on value to the STAR program.

Institutional Responsibilities

Responsibilities of STAR Institutions

A key assumption made by the NSAC Sub-panel in shaping the model used to determine the RHIC operating budget, was that institutions which constructed or developed a detector component or system as part of the STAR Construction Project were responsible, after its delivery, for providing the technical support (excluding technician support) necessary to establish routine operation of that component/system. Routine operation, in this context, is understood to mean that under ordinary circumstances, "non-expert" shift personnel with appropriate training are able to operate a given component or system for the purpose of STAR data taking.

To accomplish that goal, a realistic model designed to keep the impact upon STAR institutions modest while achieving the necessary support of STAR Operations has been implemented. Within the context of that model, it is understood by STAR Operations Management and the STAR Institutions which have provided major components or systems to be included as part of the STAR Detector that:

During the commissioning phase of STAR, and/or as necessary after prolonged shutdowns or upgrades, each institution that has delivered a major component or system of STAR will maintain sufficient "expert" presence at BNL to bring its system into full and routine operation. After routine operation of the component or system provided by each institution has been established, further operation of this detector component will be the responsibility of STAR shift personnel who have been appropriately trained.

After routine operation has been established for each running period, STAR Institutions which have delivered part of the STAR detector system are no longer required to maintain an "expert" presence at BNL. They are however expected to provide a "call-down list" which insures that someone with appropriate expertise may be reached at all times, with a delay of less than 1-2 hours. Each institution is further responsible for informing the STAR Operations Coordinator of changes in the call-down list. The decision to consult institutional experts will be made by the STAR shift leader or by the STAR Operations Coordinator. Every reasonable attempt will be made to solve problems using on-site expertise before calling upon on-call experts.

In the event of a serious problem, which can not be repaired with remote consultation, the STAR Institution which provided that component or system will be responsible for sending someone to BNL who has the expertise to fix the problem. An "Emergency Expert" should be able, if necessary, to travel to BNL with several days notice. The decision to send someone or not will be discussed with the STAR Operations Coordinator, and will be made based on practical factors, such as the severity of the problem, the uniqueness of the expertise which is required, and the availability of the component or system for repair on arrival of the expert.

Each institution is responsible for developing any specialized training and/or documentation required to hand over routine operation of their part of the STAR detector to STAR shift personnel. A further responsibility is to provide any specialized tools/hardware that are required to enable STAR technical support personnel to perform routine maintenance.

The STAR Institutions who have certified, by memorandum of understanding that they understand and agree with the description of their institutional responsibilities as outlined above are listed in Appendix 5.

Additional BNL Responsibilities

In addition to the institutional responsibilities outlined above, the BNL STAR Group is also responsible for providing effective management and leadership of the STAR Technical Support Group and the STAR Detector Support Group. It has further responsibility for effective management of STAR Operations support resources, and for providing technician support for routine maintenance in support of institutionally contributed components or systems.

Relationship Between The STAR Operations Work Plan and the STAR Run Plan

In general, the work plan for the STAR Technical Support Group and the STAR Detector Support Group will be focused on maintenance and operation of STAR detector components and systems, and not on activities directly related to the acquisition of scientific data. Specifically, oversight of the staffing of shifts for the purpose of data acquisition is not the responsibility of STAR Operations Management. The STAR run plan will be carried out in accordance with the STAR Shift Plan Document (Appendix 6).

There are nevertheless two areas where the STAR Operations work plan and the STAR run plan closely couple.

The first is in the area of training. It is the responsibility of the STAR Operations Coordinator, and the STAR Technical Support Group Leader as appropriate, to determine, based on input from Sub-System Managers and other BNL staff, what general, CAD, and STAR-specific training is required for STAR shift personnel to effectively carry out their responsibilities. Members of the STAR Detector Support Group and the STAR Technical Support Group are responsible for identifying and developing any specialized STAR-specific training and/or documentation required to hand over routine operation of STAR components and systems in their area of responsibility to appropriately trained shift crew. STAR Collaboration members are responsible for taking the necessary training once training requirements have been specified. All work performed at BNL must be in compliance with the BNL Integrated Safety Management Program.

The second significant overlap, is the assessment, based on the STAR Operations schedule, and the plan of operation for the RHIC Collider, of what the operational parameters (e.g. machine schedule, maintenance periods, luminosity, beam species, scheduled down times, etc.) for a given running period are likely to be. Upon making this assessment, the STAR Operations Coordinator is responsible for communicating this information to the STAR Collaboration, and the STAR Shift Schedule Coordinator, who is responsible for oversight of the STAR Shift Signup Calendar.

STAR Shift Schedule Coordinator

The responsibilities of the STAR Shift Schedule Coordinator include the following:

- 1) to communicate with the STAR Operations Coordinator, to insure the STAR shift schedule signup calendar correctly reflects the schedule for STAR/RHIC running
- 2) to coordinate with the STAR Operations Coordinator to insure any special staffing requirements for STAR shift personnel are correctly reflected in the STAR shift sign-up calendar
- 3) to communicate to the STAR shift schedule signup calendar custodian
- 4) modifications needed to address items 1 & 2
- 5) to oversee Collaboration progress in filling out the STAR shift schedule sign-up calendar, and flag potential problem periods with insufficient manpower

- 6) to track fulfillment of institutional commitments by maintaining an existing excel spreadsheet and periodically summarizing the institutional response in signing up for shifts.
- 7) to provide summary information to the Spokesperson regarding Collaboration response to the shift sign-up process.
- 8) to serve as a point of contact for Collaboration members regarding questions concerning the shift schedule sign-up process.

Relationship Between STAR Operations and the C-AD

ES&H

The Collider-Accelerator Department is responsible for defining the envelope for safe operation of the RHIC Collider and detectors, and for establishing rules and procedures necessary to insure compliance with the BNL Integrated Safety Management Program. STAR Operations Management is responsible to the Physics Department Chairman to insure that operation of the STAR Detector falls within the safety envelope established by C-AD, and that all work carried out by STAR personnel at the RHIC site is in compliance with C-AD rules and procedures. STAR Operations Management is further responsible to C-AD management to participate fully in its ISM program, and to provide any documentation required to verify STAR compliance.

The Work Control Manager for work performed by STAR personnel at C-AD facilities, including the STAR detector, is Peter Cirnigliaro. The Work Control Coordinator and Work Control Supervisor for work to be performed by STAR personnel are Ralph Brown and Tony Krupien, respectively. As part of the enhanced work planning program of C-AD, any work to be performed at the STAR site must be identified to the STAR Work Control Supervisor, who will determine whether the activity is skill of the craft. Work that is determined not to be skill of the craft requires a work permit.

Coordination with C-AD

There are two personnel within the Collider-Accelerator Department specifically tasked with providing management and oversight of C-AD facilities and infrastructure supplied in support of the Operation of the STAR Detector: the STAR Liaison Engineer, and the STAR Liaison Physicist.

STAR Liaison Engineer

The STAR Liaison Engineer is responsible directly, or through other C-A department personnel or Plant Engineering for the upkeep and maintenance of STAR facilities as well as for improvements that may be required. The STAR Liaison Engineer is further responsible for management and oversight of technical resources and support supplied by or through C-AD to maintain and improve infrastructure it supplies in support of STAR Detector Operations.

Examples of areas in which the STAR Liaison Engineer has responsibility include buildings and grounds, water systems and chillers, electrical power, and calibration and maintenance of safety systems.

STAR Liaison Physicist

The STAR Liaison Physicist is responsible for providing an effective interface between STAR Operations Management and the Collider-Accelerator Department and for facilitating communication regarding C-AD policies and procedures. He is further responsible for providing accelerator physics support as required, and for coordinating with the STAR Liaison Engineer and the Management of the C-AD Experimental Facilities Support Division regarding C-AD resources required for support of STAR Operations. The responsibilities of the STAR Liaison Physicist include:

- 1) Providing C-A Department physics support to the experiment as required including, for example, shielding calculations and beam transport design.
2. Facilitating communication between experiment personnel and C-A Department personnel regarding C-AD training requirements, procedures, and ES&H issues.
3. Assisting the experiment Spokesperson or their designee in preparing for reviews required by C-A OPM 9.2.1 by the Experimental Safety Review Committee (ESRC) and the Radiation Safety Committee (RSC).
4. Ensuring sign off by both the ESRC and RSC on any check-listed items related to the experiment which exist prior to start-up as required by C-A OPM 9.2.1.
5. Coordinating with the STAR Liaison Engineer regarding the experiments needs and priorities related to C-A Departmental resources.
6. Attending periodic meetings with experiment personnel in order to monitor compliance with the established C-AD experiment safety envelope.